

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.**

Application Serial Number: 10/542, 769 A  
Source: PLT  
Date Processed by STIC: 03/20/2006

# ***ENTERED***



PCT

## RAW SEQUENCE LISTING

DATE: 03/20/2006

PATENT APPLICATION: US/10/542,769A

TIME: 12:14:06

Input Set : A:\WEICK046.APP

Output Set: N:\CRF4\03202006\J542769A.raw

3 <110> APPLICANT: BUTZKE, DANIEL  
 4 GOEDERT, SIGRID  
 5 DITTRICH, MICHAEL  
 6 RUDEL, THOMAS  
 7 MEYER, THOMAS  
 9 <120> TITLE OF INVENTION: L-AMINO ACID OXIDASE WITH CYTOTOXIC ACTIVITY FROM  
 10 APLYSIA PUNCTATA  
 12 <130> FILE REFERENCE: WEICKM-0046  
 14 <140> CURRENT APPLICATION NUMBER: 10/542,769A  
 15 <141> CURRENT FILING DATE: 2005 07-20  
 17 <150> PRIOR APPLICATION NUMBER: PCT/EP04/00423  
 18 <151> PRIOR FILING DATE: 2004-01-20  
 20 <150> PRIOR APPLICATION NUMBER: EP 03001232.2  
 21 <151> PRIOR FILING DATE: 2003-01-20  
 23 <150> PRIOR APPLICATION NUMBER: EP 03026613.4  
 24 <151> PRIOR FILING DATE: 2003-11-19  
 26 <160> NUMBER OF SEQ ID NOS: 78  
 28 <170> SOFTWARE: PatentIn Ver. 3.3  
 30 <210> SEQ ID NO: 1  
 31 <211> LENGTH: 1608  
 32 <212> TYPE: DNA  
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 36 <221> NAME/KEY: CDS  
 37 <222> LOCATION: (1)..(1608)  
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 41 Met Ser Ser Ala Val Leu Leu Leu Ala Cys Ala Leu Val Ile Ser Val  
 42 1 5 10 15  
 44 cac gcc gac ggt atc tgc aga aac aga cgt caa tgt aac aga gag gtg 96  
 45 His Ala Asp Gly Ile Cys Arg Asn Arg Arg Gln Cys Asn Arg Glu Val  
 46 20 25 30  
 48 tgc ggt tct acc tac gat gtg gcc gtc gtg ggg gcg ggg cct ggg gga 144  
 49 Cys Gly Ser Thr Tyr Asp Val Ala Val Val Gly Ala Gly Pro Gly Gly  
 50 35 40 45  
 52 gct aac tcc gcc tac atg ctg agg gac tcc ggc ctg gac atc gct gtg 192  
 53 Ala Asn Ser Ala Tyr Met Leu Arg Asp Ser Gly Leu Asp Ile Ala Val  
 54 50 55 60  
 56 ttc gag tac tcg gac cga gtg ggc ggc cgg ctg ttc acc tac cag ctg 240  
 57 Phe Glu Tyr Ser Asp Arg Val Gly Gly Arg Leu Phe Thr Tyr Gln Leu  
 58 65 70 75 80  
 60 ccc aac aca ccc gac gtt aac ctg gag att ggc ggc atg agg ttc atc 288  
 61 Pro Asn Thr Pro Asp Val Asn Leu Glu Ile Gly Gly Met Arg Phe Ile

(Pg-6)

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62	85	90	95	
64	gaa ggc gcc atg cac agg ctc tgg agg gtc att tca gaa ctc ggc cta	336		
65	Glu Gly Ala Met His Arg Leu Trp Arg Val Ile Ser Glu Leu Gly Leu			
66	100 105 110			
68	acc ccc aag gtg ttc aag gaa ggt ttc ggc aag gag ggc aga caa aga	384		
69	Thr Pro Lys Val Phe Lys Glu Gly Phe Gly Lys Glu Gly Arg Gln Arg			
70	115 120 125			
72	ttt tac ctg cgg gga cag agc ctg acc aag aaa cag gtc aag agt ggg	432		
73	Phe Tyr Leu Arg Gly Gln Ser Leu Thr Lys Lys Gln Val Lys Ser Gly			
74	130 135 140			
76	gac gta ccc tat gac ctc agc ccg gag gag aaa gaa aac cag gga aat	480		
77	Asp Val Pro Tyr Asp Leu Ser Pro Glu Glu Lys Glu Asn Gln Gly Asn			
78	145 150 155 160			
80	ctg gtc gaa tac tac ctg gag aaa ctg aca ggt cta caa ctc aac ggc	528		
81	Leu Val Glu Tyr Tyr Leu Glu Lys Leu Thr Gly Leu Gln Leu Asn Gly			
82	165 170 175			
84	gag ccg ctc aaa cgt gag gtt gcg ctt aaa cta acc gtg ccg gac ggc	576		
85	Glu Pro Leu Lys Arg Glu Val Ala Leu Lys Leu Thr Val Pro Asp Gly			
86	180 185 190			
88	aga ttc ctc tat gac ctc tcg ttt gac gaa gcc atg gat ctg gtt gcc	624		
89	Arg Phe Leu Tyr Asp Leu Ser Phe Asp Glu Ala Met Asp Leu Val Ala			
90	195 200 205			
92	tcc cct gag ggc aaa gag ttc acc cga gac acg cac gtc ttc aca gga	672		
93	Ser Pro Glu Gly Lys Glu Phe Thr Arg Asp Thr His Val Phe Thr Gly			
94	210 215 220			
96	gag gtc acc ctg gac gcg tcg gct gtc tcc ctc ttc gac gac cac ctg	720		
97	Glu Val Thr Leu Asp Ala Ser Ala Val Ser Leu Phe Asp Asp His Leu			
98	225 230 235 240			
100	gga gag gac tac tat ggc agt gag atc tac acc cta aag gaa gga ctg	768		
101	Gly Glu Asp Tyr Tyr Gly Ser Glu Ile Tyr Thr Leu Lys Glu Gly Leu			
102	245 250 255			
104	tct tcc gtc cca caa ggg ctc cta cag gct ttt ctg gac gcc gca gac	816		
105	Ser Ser Val Pro Gln Gly Leu Leu Gln Ala Phe Leu Asp Ala Ala Asp			
106	260 265 270			
108	tcc aac gag ttc tat ccc aac agc cac ctg aag gcc ctg aga cgt aag	864		
109	Ser Asn Glu Phe Tyr Pro Asn Ser His Leu Lys Ala Leu Arg Arg Lys			
110	275 280 285			
112	acc aac ggt cag tat gtt ctt tac ttt gag ccc acc acc tcc aag gat	912		
113	Thr Asn Gly Gln Tyr Val Leu Tyr Phe Glu Pro Thr Thr Ser Lys Asp			
114	290 295 300			
116	gga caa acc aca atc aac tat ctg gaa ccc ctg cag gtt gtg tgt gca	960		
117	Gly Gln Thr Thr Ile Asn Tyr Leu Glu Pro Leu Gln Val Val Cys Ala			
118	305 310 315 320			
120	caa aga gtc atc ctg gcc atg ccg gta tac gct ctg aac caa cta gac	1008		
121	Gln Arg Val Ile Leu Ala Met Pro Val Tyr Ala Leu Asn Gln Leu Asp			
122	325 330 335			
124	tgg aat cag ctc aga aat gac cga gcc acc caa gcg tac gct gcc gtt	1056		
125	Trp Asn Gln Leu Arg Asn Asp Arg Ala Thr Gln Ala Tyr Ala Ala Val			
126	340 345 350			

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129 Arg Pro Ile Pro Ala Ser Lys Val Phe Met Ser Phe Asp Gln Pro Trp
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132 tgg ttg gag aac gag agg aaa tcc tgg gtc acc aag tcg gac gcg ctt 1152
133 Trp Leu Glu Asn Glu Arg Lys Ser Trp Val Thr Lys Ser Asp Ala Leu
134      370      375      380
136 ttc agc caa atg tac gac tgg cag aag tct gag gcg tcc gga gac tac 1200
137 Phe Ser Gln Met Tyr Asp Trp Gln Lys Ser Glu Ala Ser Gly Asp Tyr
138 385      390      395      400
140 atc ctg atc gcc agc tac gcc gac ggc ctc aaa gcc cag tac ctg cgg 1248
141 Ile Leu Ile Ala Ser Tyr Ala Asp Gly Leu Lys Ala Gln Tyr Leu Arg
142      405      410      415
144 gag ctg aag aat cag gga gag gac atc cca ggc tct gac cca ggc tac 1296
145 Glu Leu Lys Asn Gln Gly Glu Asp Ile Pro Gly Ser Asp Pro Gly Tyr
146      420      425      430
148 aac cag gtt acc gaa ccc ctc aag gac acc att ctt gac cac ctc act 1344
149 Asn Gln Val Thr Glu Pro Leu Lys Asp Thr Ile Leu Asp His Leu Thr
150      435      440      445
152 gag gct tcc gcc gtg gag cga gac tcg atc ccg gaa ccc gtg acc gcc 1392
153 Glu Ala Tyr Gly Val Glu Arg Asp Ser Ile Pro Glu Pro Val Thr Ala
154      450      455      460
156 gct tcc cag ttc tgg aca gac tac ccg ttt ggc tgt gga tgg atc acc 1440
157 Ala Ser Gln Phe Trp Thr Asp Tyr Pro Phe Gly Cys Gly Trp Ile Thr
158 465      470      475      480
160 tgg agg gcc ggc ttc cat ttc gat gac gtc atc agc acc atg cgt cgc 1488
161 Trp Arg Ala Gly Phe His Phe Asp Asp Val Ile Ser Thr Met Arg Arg
162      485      490      495
164 ccg tca ctg aaa gat gag gta tac gtg gtg gga gcc gac tac tcc tgg 1536
165 Pro Ser Leu Lys Asp Glu Val Tyr Val Val Gly Ala Asp Tyr Ser Trp
166      500      505      510
168 gga ctt atc tcc tcc tgg ata gag ggc gct ctg gag acc tcg gaa aac 1584
169 Gly Leu Ile Ser Ser Trp Ile Glu Gly Ala Leu Glu Thr Ser Glu Asn
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179 <212> TYPE: PRT
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187      20      25      30
189 Cys Gly Ser Thr Tyr Asp Val Ala Val Val Gly Ala Gly Pro Gly Gly
190      35      40      45
192 Ala Asn Ser Ala Tyr Met Leu Arg Asp Ser Gly Leu Asp Ile Ala Val
193      50      55      60

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198 Pro Asn Thr Pro Asp Val Asn Leu Glu Ile Gly Gly Met Arg Phe Ile
199 85 90 95
201 Glu Gly Ala Met His Arg Leu Trp Arg Val Ile Ser Glu Leu Gly Leu
202 100 105 110
204 Thr Pro Lys Val Phe Lys Glu Gly Phe Gly Lys Glu Gly Arg Gln Arg
205 115 120 125
207 Phe Tyr Leu Arg Gly Gln Ser Leu Thr Lys Lys Gln Val Lys Ser Gly
208 130 135 140
210 Asp Val Pro Tyr Asp Leu Ser Pro Glu Glu Lys Glu Asn Gln Gly Asn
211 145 150 155 160
213 Leu Val Glu Tyr Tyr Leu Glu Lys Leu Thr Gly Leu Gln Leu Asn Gly
214 165 170 175
216 Glu Pro Leu Lys Arg Glu Val Ala Leu Lys Leu Thr Val Pro Asp Gly
217 180 185 190
219 Arg Phe Leu Tyr Asp Leu Ser Phe Asp Glu Ala Met Asp Leu Val Ala
220 195 200 205
222 Ser Pro Glu Gly Lys Glu Phe Thr Arg Asp Thr His Val Phe Thr Gly
223 210 215 220
225 Glu Val Thr Leu Asp Ala Ser Ala Val Ser Leu Phe Asp Asp His Leu
226 225 230 235 240
228 Gly Glu Asp Tyr Tyr Gly Ser Glu Ile Tyr Thr Leu Lys Glu Gly Leu
229 245 250 255
231 Ser Ser Val Pro Gln Gly Leu Leu Gln Ala Phe Leu Asp Ala Ala Asp
232 260 265 270
234 Ser Asn Glu Phe Tyr Pro Asn Ser His Leu Lys Ala Leu Arg Arg Lys
235 275 280 285
237 Thr Asn Gly Gln Tyr Val Leu Tyr Phe Glu Pro Thr Thr Ser Lys Asp
238 290 295 300
240 Gly Gln Thr Thr Ile Asn Tyr Leu Glu Pro Leu Gln Val Val Cys Ala
241 305 310 315 320
243 Gln Arg Val Ile Leu Ala Met Pro Val Tyr Ala Leu Asn Gln Leu Asp
244 325 330 335
246 Trp Asn Gln Leu Arg Asn Asp Arg Ala Thr Gln Ala Tyr Ala Ala Val
247 340 345 350
249 Arg Pro Ile Pro Ala Ser Lys Val Phe Met Ser Phe Asp Gln Pro Trp
250 355 360 365
252 Trp Leu Glu Asn Glu Arg Lys Ser Trp Val Thr Lys Ser Asp Ala Leu
253 370 375 380
255 Phe Ser Gln Met Tyr Asp Trp Gln Lys Ser Glu Ala Ser Gly Asp Tyr
256 385 390 395 400
258 Ile Leu Ile Ala Ser Tyr Ala Asp Gly Leu Lys Ala Gln Tyr Leu Arg
259 405 410 415
261 Glu Leu Lys Asn Gln Gly Glu Asp Ile Pro Gly Ser Asp Pro Gly Tyr
262 420 425 430
264 Asn Gln Val Thr Glu Pro Leu Lys Asp Thr Ile Leu Asp His Leu Thr
265 435 440 445
267 Glu Ala Tyr Gly Val Glu Arg Asp Ser Ile Pro Glu Pro Val Thr Ala

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268      450      455      460
270 Ala Ser Gln Phe Trp Thr Asp Tyr Pro Phe Gly Cys Gly Trp Ile Thr
271 465      470      475      480
273 Trp Arg Ala Gly Phe His Phe Asp Asp Val Ile Ser Thr Met Arg Arg
274      485      490      495
276 Pro Ser Leu Lys Asp Glu Val Tyr Val Val Gly Ala Asp Tyr Ser Trp
277      500      505      510
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283      530      535
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288 <211> LENGTH: 1605
289 <212> TYPE: DNA
290 <213> ORGANISM: Aplysia punctata
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293 <221> NAME/KEY: CDS
294 <222> LOCATION: (1)..(1605)
296 <223> SEQUENCE: 3
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298 Ser Ser Ala Val Leu Leu Leu Ala Cys Ala Leu Val Ile Ser Val His
299 1 5 10 15
301 gcc gac ggt gtc tgc aga aac aga cgt caa tgt aac aga gag gtg tgc 96
302 Ala Asp Gly Val Cys Arg Asn Arg Arg Gln Cys Asn Arg Glu Val Cys
303 20 25 30
305 ggt tct acc tac gat gtg gcc gtc gtg ggg gcg ggg cct ggg gga gct 144
306 Gly Ser Thr Tyr Asp Val Ala Val Val Gly Ala Gly Pro Gly Gly Ala
307 35 40 45
309 aac tcc gcc tac atg ctg agg gac tcc ggc ctg gac atc gct gtg ttc 192
310 Asn Ser Ala Tyr Met Leu Arg Asp Ser Gly Leu Asp Ile Ala Val Phe
311 50 55 60
313 gag tac tca gac cga gtg ggc ggc cgg ctg ttc acc tac cag ctg ccc 240
314 Glu Tyr Ser Asp Arg Val Gly Gly Arg Leu Phe Thr Tyr Gln Leu Pro
315 65 70 75 80
317 aac aca ccc gac gtt aat ctc gag att ggc ggc atg agg ttc atc gag 288
318 Asn Thr Pro Asp Val Asn Leu Glu Ile Gly Gly Met Arg Phe Ile Glu
319 85 90 95
321 ggc gcc atg cac agg ctc tgg agg gtc att tca gaa ctc ggc cta acc 336
322 Gly Ala Met His Arg Leu Trp Arg Val Ile Ser Glu Leu Gly Leu Thr
323 100 105 110
325 ccc aag gtg ttc aag gaa ggt ttc gga aag gag ggc aga cag aga ttt 384
326 Pro Lys Val Phe Lys Glu Gly Phe Gly Lys Glu Gly Arg Gln Arg Phe
327 115 120 125
329 tac ctg cgg gga cag agc ctg acc aag aaa cag gtc aag agt ggg gac 432
330 Tyr Leu Arg Gly Gln Ser Leu Thr Lys Lys Gln Val Lys Ser Gly Asp
331 130 135 140
333 gta ccc tat gac ctc agc ccg gag gag aaa gaa aac cag gga aat ctg 480
334 Val Pro Tyr Asp Leu Ser Pro Glu Glu Lys Glu Asn Gln Gly Asn Leu
335 145 150 155 160

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RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/10/542,769A

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Input Set : A:\WEICK046.APP  
Output Set: N:\CRF4\03202006\J542769A.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:33; Xaa Pos. 1,3,7,9  
Seq#:35; Xaa Pos. 5  
Seq#:36; Xaa Pos. 6,7  
Seq#:42; N Pos. 20,22,58,73,132,150,182,220,254,317,338  
Seq#:43; Xaa Pos. 7,8,20,25,44,50,58,59,61,74,85,106,107,112,113,132,133  
Seq#:43; Xaa Pos. 137,145  
Seq#:44; Xaa Pos. 7,19,24,44,50,61,73,85,106,109,113,127,138  
Seq#:45; Xaa Pos. 6,7,19,24,33,44,50,60,73,84,105,112,113,133  
Seq#:46; Xaa Pos. 3  
Seq#:49; Xaa Pos. 3  
Seq#:51; Xaa Pos. 5  
Seq#:59; N Pos. 17  
Seq#:63; N Pos. 24,25,29,30,34,35  
Seq#:76; Xaa Pos. 7,8  
Seq#:77; Xaa Pos. 1  
Seq#:78; Xaa Pos. 21,22,52,60,69,77

## VERIFICATION SUMMARY

DATE: 03/20/2006

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Output Set: N:\CRF4\03202006\J542769A.raw

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L:1542 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:43 after pos.:64  
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L:1932 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59 after pos.:0  
L:2014 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:63 after pos.:0  
L:2205 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:76 after pos.:0  
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L:2267 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:78 after pos.:64